

Efficient and Effective Vapor Intrusion Mitigation Techniques

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CEO – Project Director



Topic Overview

- What is Vapor Intrusion?
- Efficient / Effective Mitigation
 - Investigating the problem
 - Designing a system
 - Installing a system
 - Monitoring a system
- Case Study
- How we can help



What is Vapor Intrusion?

- Upward migration of soil gases into buildings
- Contaminants can include:
 - Volatile organic compounds (VOCs)
 - Inorganics (i.e.. mercury, hydrogen sulfide, etc.)
 - Methane
 - Radon



Mitigation Basics

- Designed to:
 - Create negative pressure below slab
 - Run continually
 - Achieve mandated vacuum requirements
 - Function under max load conditions
- Required to:
 - Meet sub slab vacuum standards
 - Conduct routine onsite inspections



Step 1 : Investigate the Problem

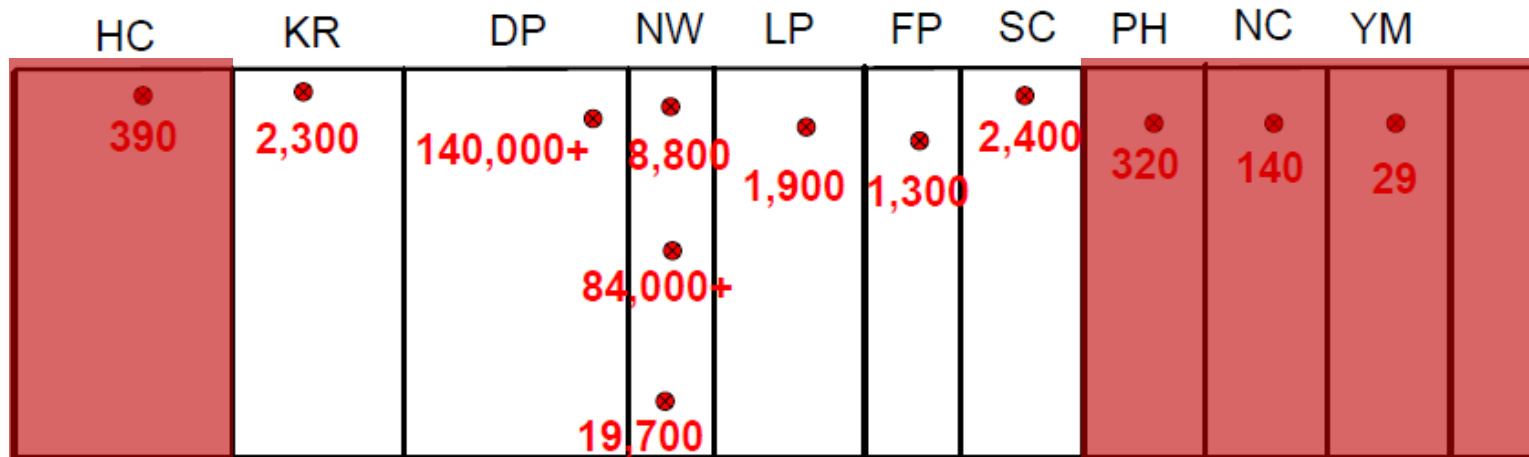
Plume delineation...



... Using a mobile lab

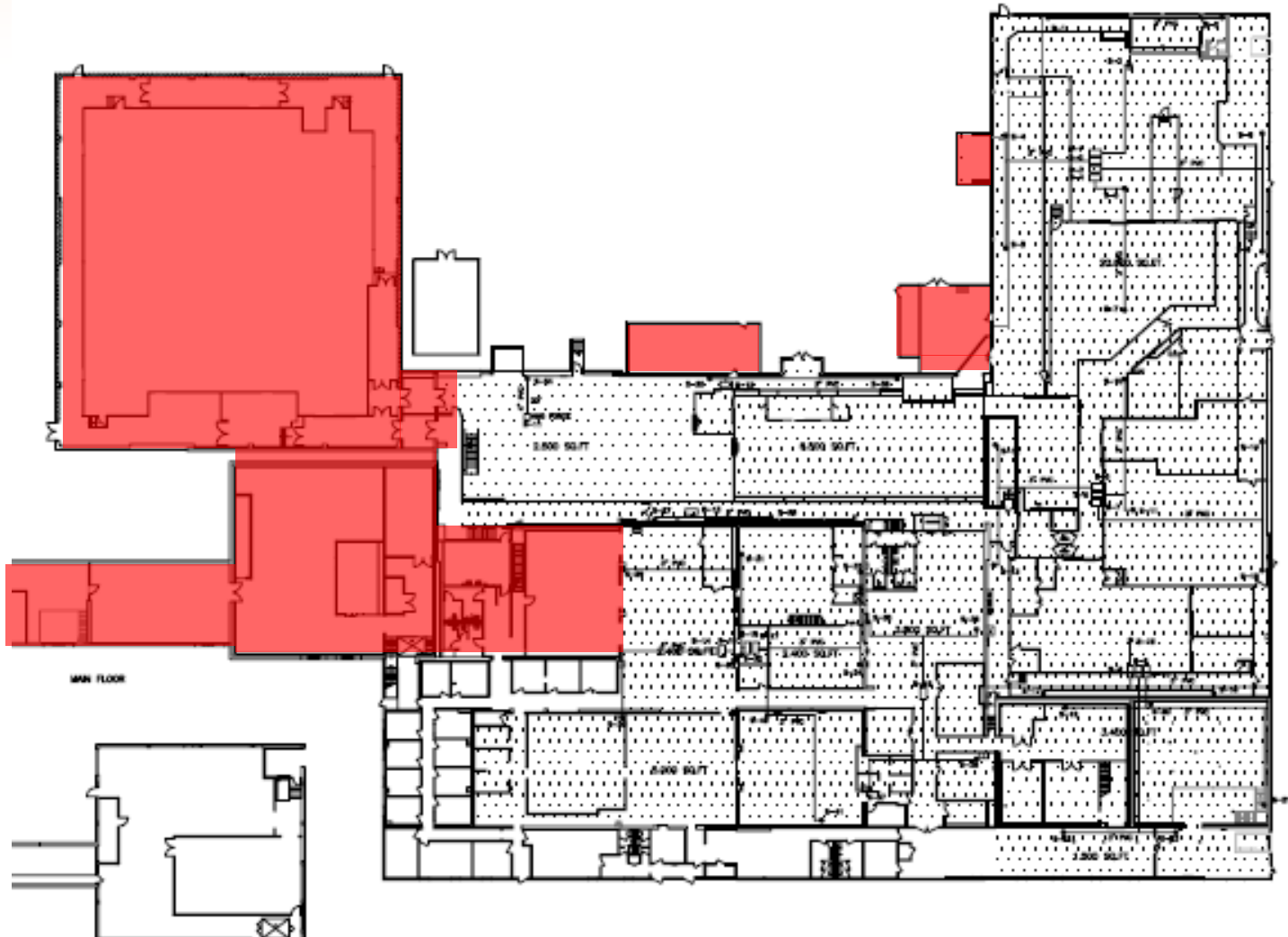
Plume Delineation

For Strip Malls...



Plume Delineation

For Industrial Buildings...



Step 2 : Designing a System

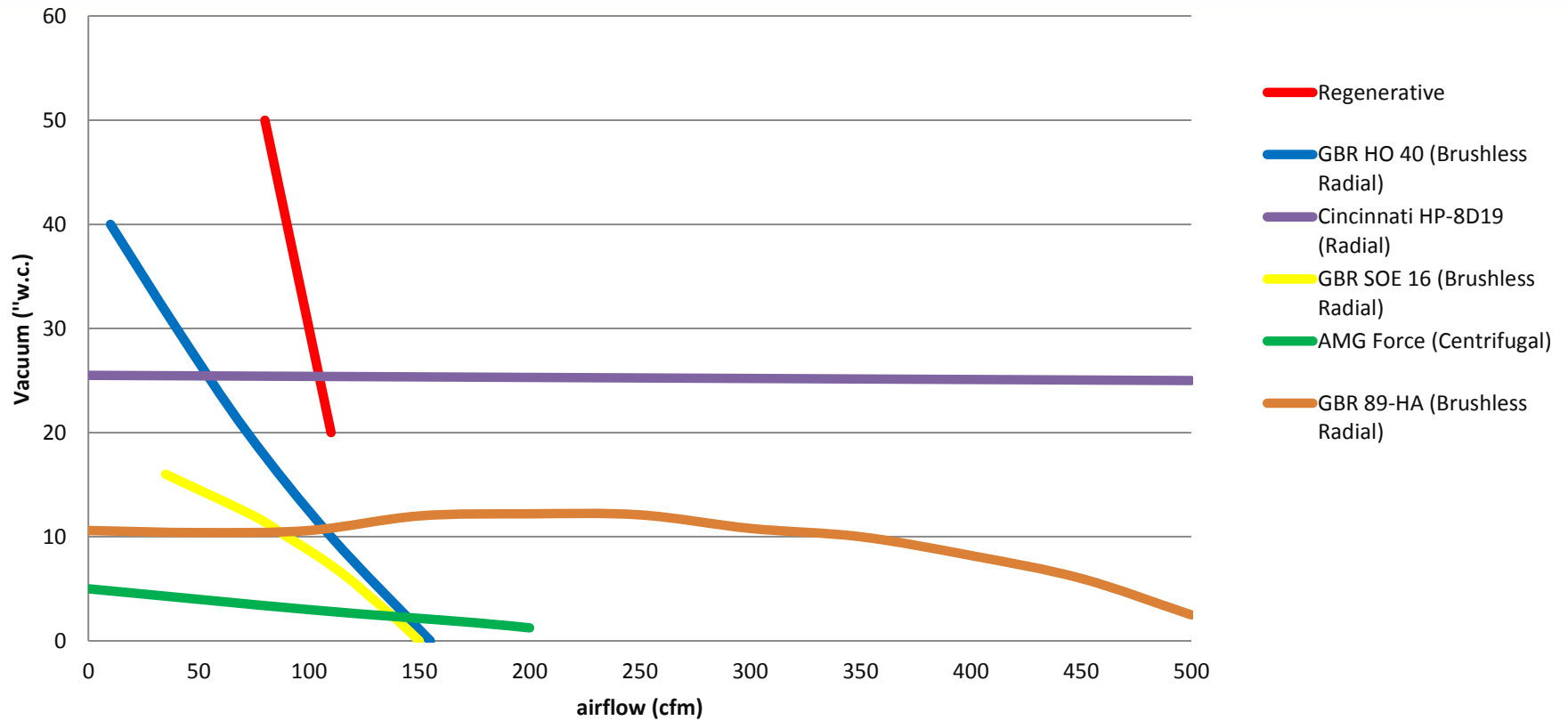
Using precision diagnostics to map permeability...



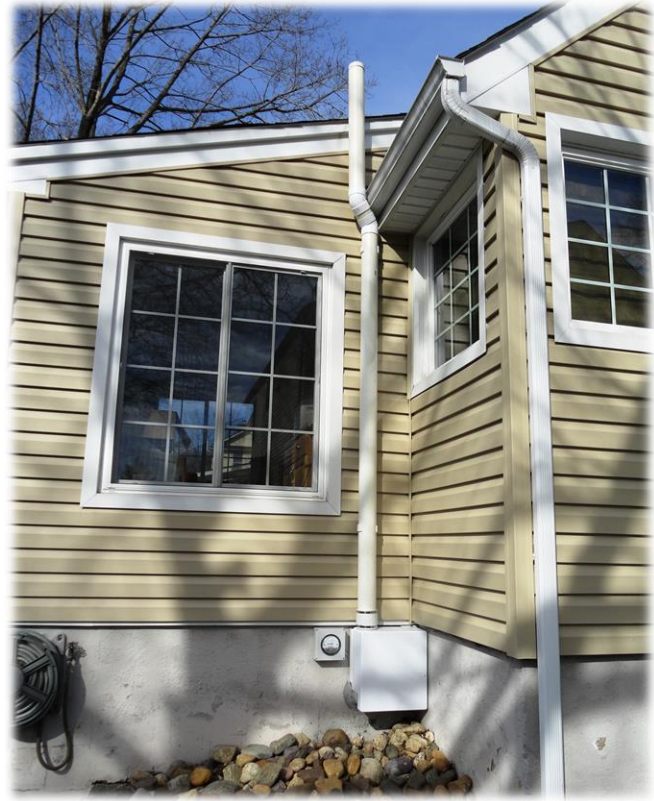
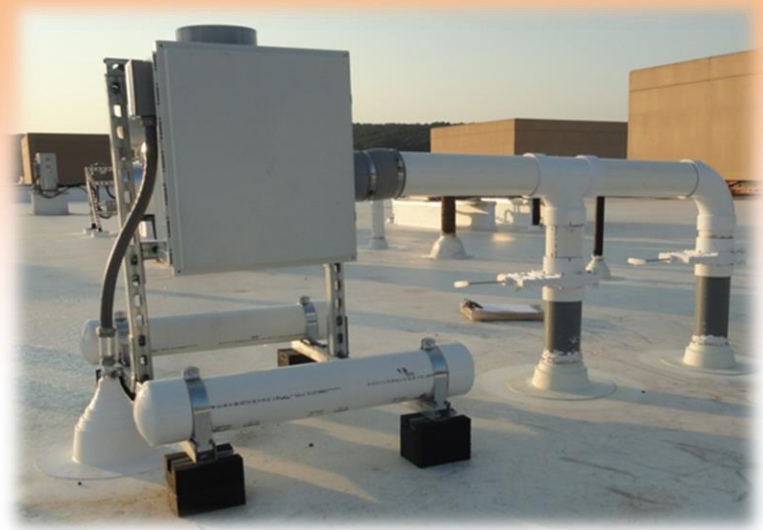
Step 2 : Designing a System



Blower Sizing



Blower Types



Step 3 : Installing a System

- Use existing building features
- Hide system components
- Check pipe pitches
- Suction pit clean out
- Check building use groups



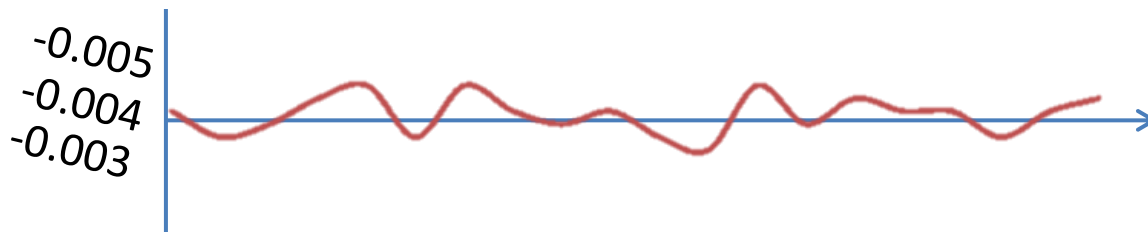
Step 4 : Monitoring a System

- Some States have requirements
 - Quarterly for the first year
 - Annually
 - Etc.
- We recommend:
 - Remote monitoring
 - Automated Alerts
 - Automated Reporting

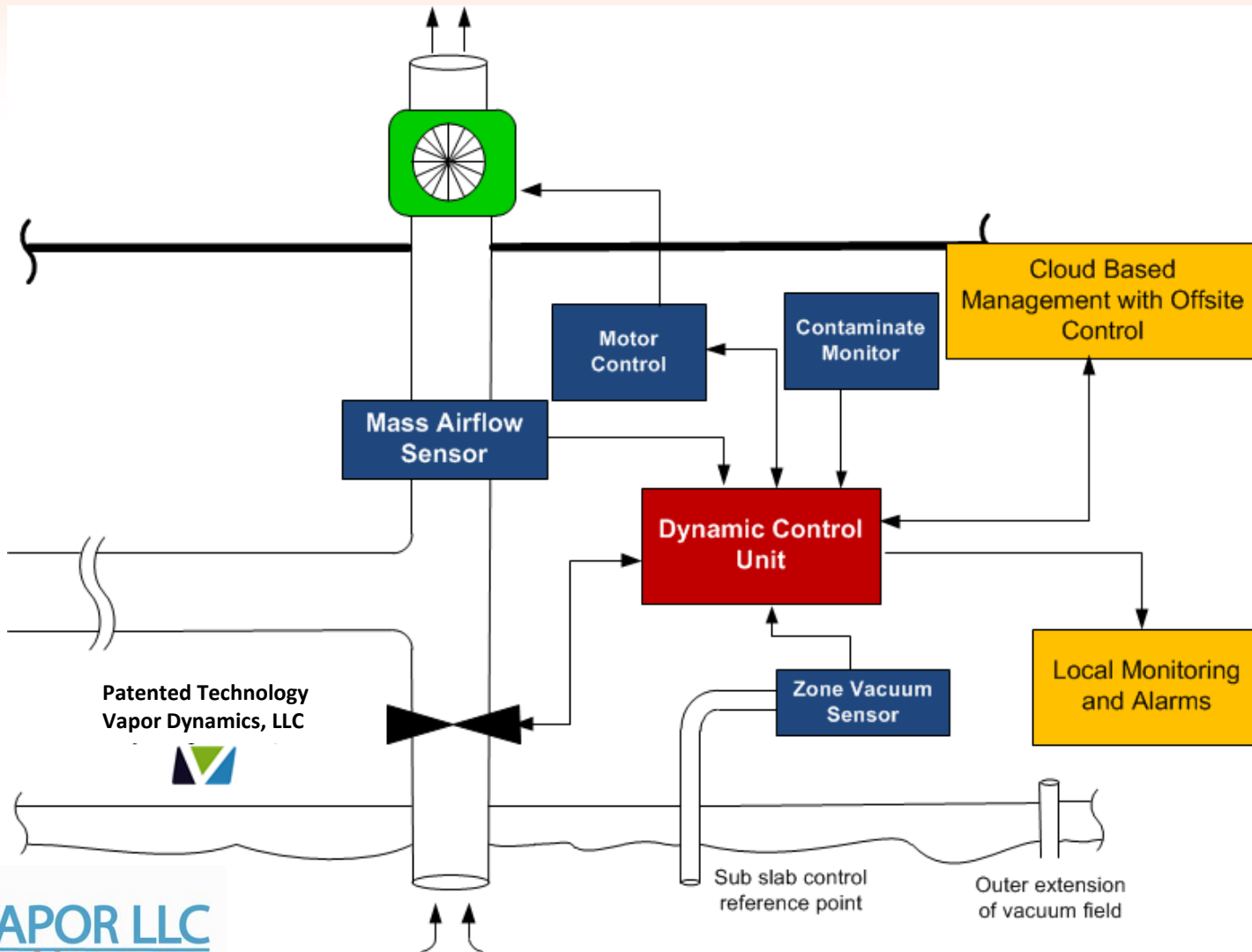


Vapor Guardian 5500

- Dynamically control 10 blower systems
- Control of sub slab vacuum
- Assign functional priority
- Monitor up to 55 inputs
- Fault notifications
- Automated reporting



Vapor Guardian 5500 Logic



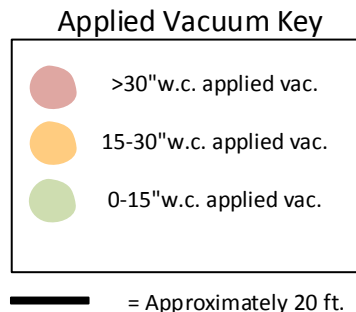
Vapor Guardian 600

- Monitor up to 6 inputs
- Ideal for:
 - Individual residences
 - Multi-family housing
 - Small buildings
- Mobile fault notifications
- Automated reporting



Case Study – The Overview

- Former Sears Complex
- Atlanta, GA
- 700,000 sq. ft.



Case Study – The Details

- 2,100 sq. ft. trenching
- 19 vertical suction points
- 1 activated carbon unit
- 6 radial blowers



Case Study – The Photos



Case Study – The Results



Case Study – The Technology

- Vapor Guardian 5500
- Monitors
 - Sub slab vacuum
 - Riser vacuum
 - Power consumption
 - Water level in knock out tank



Case Study – The Savings

- \$3,300.00 in power consumption
- 18,000 Kwh
- 55,000 lbs. CO₂



Case Study – The Reporting



Building Owner



Building Management

CLEAN VAPOR LLC
V.O.C. & RADON PLAN DESIGN AND REMEDIATION

Quarterly OM&M Report
July - September 2014
For:
Former Sears Complex
Georgia

Prepared for:
Environmental Manager
Environmental Company
123 Any Street
Atlanta, Georgia

Prepared by:
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October 1, 2014

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Responsible Party



Environmental Attorney



Regulatory Agencies

Recap – Steps to Efficient Mitigation

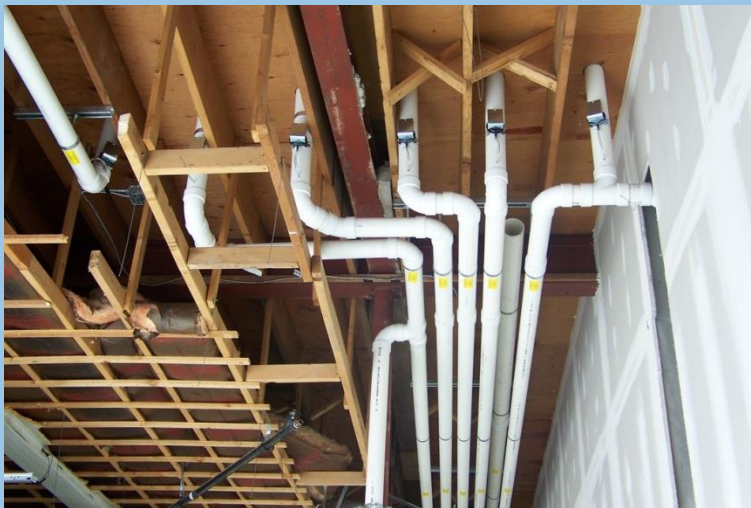
1. Investigate



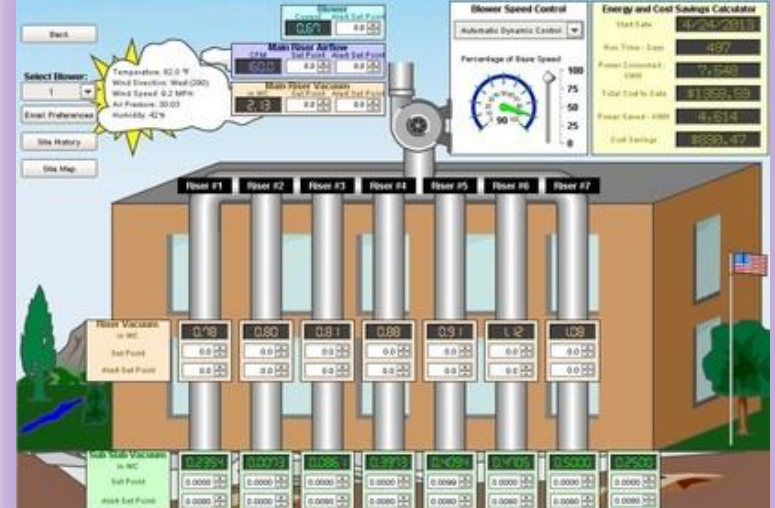
2. Design



3. Install



4. Monitor



Thanks for listening...

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